

White paper  
January 2010

# Sony Ericsson Vivaz™

## U5i, U5a



# Purpose of this document

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Sony Ericsson product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

## Document history

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### Version

January 2010	First released version	Revision 1
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## Sony Ericsson Developer World

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# Table of contents

<b>Product overview .....</b>	<b>4</b>
Sony Ericsson Vivaz™ – See the action. Cue the film. In brilliant HD .....	4
Facts – dimensions, weight, performance and networks .....	5
Full feature list, by category .....	7
<b>Technologies in detail .....</b>	<b>9</b>
Device-to-device communications (local) .....	9
Bluetooth™ wireless technology .....	9
DLNA™ (Digital Living Network Alliance).....	10
Wi-Fi™ .....	11
Java™ .....	12
Messaging .....	13
Graphics acceleration .....	14
Positioning – location based services .....	14
Provisioning (OMA CP, OMA DM) .....	14
Synchronisation (OMA DS, EAS) .....	14
Multimedia (audio and video) .....	15
Web browser .....	16
Trademarks and acknowledgements .....	17

# Product overview

## **Sony Ericsson Vivaz™ – See the action. Cue the film. In brilliant HD**

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Capture the cake fight. Record a world record. Shoot the ballerina on the bike. Catch life in brilliant HD with Sony Ericsson Vivaz™. If you're there to see it, why not shoot and share it?

### **Everything you need. To catch anything**

Don't miss the celebrities. Or the wannabes. A quick press of the dedicated video key and you're raring to record. With continuous auto focus for that flying skateboard stunt. With video light so you can see people sparkle at the club. Time for a director's cut?

### **Don't keep the world waiting**

Show everyone what a big shot you are. Vivaz™ uploads your latest shots directly to YouTube™ or Picasa™ services via Wi-Fi™ connection. Upload in your downtime. While you enjoy a smoothie, fight the Mafia, or move to the music.

### **Wide screen for wide smiles**

Watch your epics jump out in glorious colour on the wide touchscreen. Just tap the standby panel and your masterpieces are there. Together with your rock heroes. Want more fun? Go online to visit your favourite sites. What's hot on YouTube™? Check it out on the move. And show your own amazing clips to friends while you're there.









## Facts – dimensions, weight, performance and networks

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<b>Operating system</b>	Symbian™ S60 5th edition
<b>Size</b>	107 x 52 x 12.5 mm
<b>Weight</b>	97 grams
<b>Available colours</b>	Moon Silver Cosmic Black Galaxy Blue Venus Ruby
<b>Main screen</b>	
Screen type	TFT touchscreen
Colours	16,777,216 colours
Resolution	360x640 pixels
Size (diagonal)	3.2 inches
Scratch-resistant	Yes, Hardcoated
<b>Memory</b>	
Phone memory	Up to 75 MB
Memory card support	SanDisk microSD™, up to 16 GB
<b>Networks</b>	
U5i	UMTS HSPA 900 (Band VIII), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
U5a	UMTS HSPA 850 (Band V), 1900 (Band II), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
<b>Data transfer speeds</b>	
GSM GPRS	Up to 91.2 kbps (download)
GSM EDGE	Up to 236.8 kbps (download)
UMTS HSPA (upload)	Up to 2 Mbps (uplink, HSUPA, Cat 5)
UMTS HSPA (download)	Up to 7.2 Mbps (downlink, HSDPA, Cat 8)
<b>Talk time (GSM)</b>	Up to 13 hours Up to 5 hours 20 mins (5.3 hours) according to GSM Association Battery Life Measurement Technique

<b>Standby time (GSM)</b>	Up to 430 hours Up to 360 hours according to GSM Association Battery Life Measurement Technique
<b>Talk time (UMTS)</b>	Up to 5 hours 20 mins (5.3 hours) Up to 4 hours according to GSM Association Battery Life Measurement Technique
<b>Standby time (UMTS)</b>	Up to 440 hours Up to 400 hours according to GSM Association Battery Life Measurement Technique
<b>Video call time</b>	Up to 2 hours 30 mins

## Full feature list, by category

 <p><b>Camera</b></p> <ul style="list-style-type: none"> <li>8.1 megapixel camera</li> <li>4x digital zoom</li> <li>Auto focus (photos)</li> <li>Continuous auto focus (video)</li> <li>Face detection (photos)</li> <li>Geo tagging</li> <li>Image stabiliser</li> <li>Photo light</li> <li>Picture blogging</li> <li>Smile detection</li> <li>Touch capture</li> <li>Video blogging</li> <li>Video light</li> <li>Video recording (720p HD recording)</li> </ul>	 <p><b>Music</b></p> <ul style="list-style-type: none"> <li>Album art</li> <li>Bluetooth™ stereo (A2DP)</li> <li>Media player</li> <li>Music player</li> <li>Music tones (MP3/AAC)</li> <li>PlayNow™</li> <li>TrackID™</li> </ul>	 <p><b>Web</b></p> <ul style="list-style-type: none"> <li>Bookmarks</li> <li>Google™ search</li> <li>Pan &amp; zoom</li> <li>HTML 4.01</li> <li>XHTML 1.1</li> <li>Web feeds</li> <li>Web search (from standby mode)</li> <li>WebKit web browser</li> </ul>
 <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>Call list</li> <li>Conference calls</li> <li>Polyphonic ringtones</li> <li>Speakerphone</li> <li>Vibrating alert</li> <li>Video calling (main camera)</li> </ul>	 <p><b>Messaging</b></p> <ul style="list-style-type: none"> <li>Conversations</li> <li>Email</li> <li>Handwriting recognition</li> <li>Instant messaging</li> <li>Microsoft® Exchange Active-Sync®</li> <li>Picture messaging (MMS)</li> <li>Predictive text input</li> <li>Sound recorder</li> <li>Text messaging (SMS)</li> </ul>	 <p><b>Design</b></p> <ul style="list-style-type: none"> <li>Auto rotate</li> <li>Picture wallpaper</li> <li>Symbian™ OS</li> <li>Touchscreen</li> </ul>



### **Entertainment**

3D games  
Facebook™ application  
FM radio  
Java™  
Twitter™ application  
Video streaming  
Video viewing  
YouTube™



### **Organiser**

Alarm clock  
Calculator  
Calendar  
Document readers  
Flight mode  
Notes  
Phone book



### **Connectivity**

3.5 mm audio jack  
A-GPS  
Bluetooth™ technology  
DLNA Certified™  
Google Maps™  
Micro USB connector  
Modem  
PictBridge™  
Synchronisation  
TV out  
USB mass storage  
USB High speed 2.0 support  
WAPI (Note: Available in China only)  
Wi-Fi™ connection  
Wisepilot™ turn-by-turn navigation

# Technologies in detail

**\*NOTE:** The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Ericsson Developer World or your Sony Ericsson contact person where applicable.

## Device-to-device communications (local)

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### Bluetooth™ wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile Audio/Video Remote Control Profile Dial-up Networking Profile File Transfer Profile Generic Access Profile Generic Object Exchange Profile Handsfree Profile Headset Profile Object Push Profile Phonebook Access Profile Serial Port Profile
Core version and supported features	2.0+EDR
Connectable devices	Interoperability and compatibility among Bluetooth™ devices varies. This device generally supports products utilizing Bluetooth spec. 1.1, or higher, and at least one of the profiles above.

More information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

[www.bluetooth.com](http://www.bluetooth.com)

**DLNA™ (Digital Living Network Alliance)**

DLNA is a term used to describe an inter-device media transfer technology. Designed to allow an array of devices in the home to communicate and share content and experiences. DLNA devices can include Hi-Fi equipment, TVs and PCs.

Supported Device Classes	DMS – Digital Media Server Media Types: Music, Images Summary: The digital media server exposes the media files in your phone to a Wi-Fi network. The media can then be accessed from a DLNA client such as a PS3 or even another phone.
Supported Bearers	Wi-Fi™
DRM Support	The Sony Ericsson DLNA implementation does not support DRM protected content.

## Wi-Fi™

Wi-Fi™ is a popular wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections. Wi-Fi™ hotspots exist in an increasing number of locations, for example, airports, hotels, cafés and bistros. If a mobile phone supports Wi-Fi™, it can be used to take advantage of high data transfer rates and lower calling costs.

Supported standards	IEEE 802.11b/g and Wi-Fi™
Connectable devices	Wi-Fi™ access points
Frequency band	2.4 GHz
Security standards	WPA/WPA2 EAP-TLS PEAP EAP-MSCHAPv2 EAP-TTLS EAP-GTC EAP-SIM EAP-AKA WEP 802.1X WPS
Encryption	WEP, TKIP and AES
Power saving	IEEE Power Save UAPSD
QoS	WMM™

# Java™

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Java™ Platform, Micro Edition	JSR-75 PDA Optional Packages for J2ME™ JSR-82 Bluetooth Wireless Technology API JSR-118 MIDP 2.1 JSR-120 Wireless Messaging API JSR-135 Mobile Media API 1.1 JSR-139 CLDC 1.1 JSR-172 J2ME™ Web Services Specification JSR-177 Security and Trust Services API for J2ME™ JSR-179 Location API JSR-184 Mobile 3D Graphics API for J2ME™ JSR-205 Wireless Messaging API 2.0 JSR-211 Content Handler API JSR-226 SVG API for J2ME™ JSR-234 Advanced Multimedia Supplements JSR-248 Mobile Services Architecture JSR-256 Mobile Sensor API (accelerometer) Nokia UI Extension API Capuchin eSWT
Java 3D	JSR-184 Mobile 3D Graphics API for J2ME™

# Messaging

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## MMS Multimedia Messaging Service

According to OMA Multimedia Messaging Service v1.2 + SMIL

## Email

Bearer type (IP)	GSM Data (IP) GPRS and HSCSD
Character sets	US-ASCII UTF-7 UTF-8 UTF-16 UCS-2 / ISO10646 UCS2 ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO-8859-10 Nordic ISO-8859-11 Thai ISO-8859-15 Western MR5 KOI8-R GB18030 Simplified Chinese GB2312 Simplified Chinese BIG5 ISO2022JP Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1255 Hebrew Windows® 1258 Vietnamese Shift JIS  Note: GB2312 is available in Simplified Chinese variants only, that is, Mainland China variants.  BIG5 is only available in Traditional Chinese variants, that is, Hong Kong and Taiwan variants.
OTA provisioning solution	OMA Client Provisioning 1.1
Protocols	POP3, SMTP and IMAP4
Push email	IMAP IDLE (extension of IMAP4 Rev1), OMA Email Notification 1.0 and scheduled checking, Microsoft Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes

## Graphics acceleration

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This phone supports OpenGL™ ES 1.1 and OpenGL™ ES 2.0 Khronos APIs for native applications.

## Positioning – location based services

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Supported standards: A-GPS, SUPL

JSR-179 (Location API 1.0)

OMA Secure User Plane Location (SUPL) v1.0

Nokia Landmark Exchange format (LMX) - for sharing locations using MMS

## Provisioning (OMA CP, OMA DM)

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OMA CP version 1.1

OMA DM version 1.1.2, 1.2

Related information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

## Synchronisation (OMA DS, EAS)

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OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0, notes as text/plain

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Related information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

## Multimedia (audio and video)

<b>Audio Playback</b>	<b>Decoder format</b> Audio decoding MPEG-1/2/2.5, audio layer 3 AAC, AAC+, eAAC+  AMR-NB WMA version 2,7,8: Class 1 WMA version 9: Level 3 General MIDI (GM) GML SP-MIDI Linear/A-law/u-law PCM iMelody RealAudio	<b>Supported in file format</b> MP3 (.mp3)  3GP (.3gp); AAC (.aac); MP4 (.mp4); M4A (.m4a) 3GP (.3gp); AMR (.amr) WMA (.wma) WMA (.wma) SMF (.mid) SMF (.mid) SMF (.mid); XMF (.xmf, .mxmf) WAV (.wav) iMelody (.imy) RA (.ra)
<b>Audio Recording</b>	<b>Encoder format</b> AMR-NB AAC-LC	<b>Supported in file format</b> AMR (.amr) MP4 (.mp4)
<b>Video Playback</b>	<b>Decoder format</b> MPEG-4 Visual Simple Profile H.264 Baseline Profile H.263 Profile 0 VC-1 (WMV9) RealVideo 8, 9, 10	<b>Supported in file format</b> 3GP (.3gp); MP4 (.mp4) 3GP (.3gp); MP4 (.mp4) 3GP (.3gp) ASF (.asf, .wmv) RM (.rm), RAM (.ram), RV (.rv)
<b>Video Recording</b>	<b>Encoder format</b> - Video: H.263 Profile 0 - Audio: AMR-NB - Video: MPEG-4 Visual Simple Profile - Audio: AAC-LC	<b>Supported in file format</b> 3GP (.3gp)  MP4 (.mp4)
<b>Audio/Video Streaming</b>	Streaming transport	RTSP according to 3GPP™
<b>DRM</b>	DRM (Digital Rights Management) features the rights and copy protection of downloaded content.	OMA DRM 1.0, 2.0, 2.1

## Web browser

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Browser version	WebKit, S60 5th edition
Bookmarks	Folders supported
Bookmark export/import	Bookmarks can be sent and received in vBookmark format via Bluetooth™, SMS, MMS and email
Navigation/rendering	Full page PC rendering, Overview mode & Visual History Landscape/portrait rendering Multiple windows
Search	Internet Search Find on web page (Text search)
Web widgets	S60 5.0 WRT (Web Run Time) Web Widgets
Browser plug-ins	Adobe™ FlashLite™ 3.0 SVG-T Audio/Video
Web feeds	Feeds detection in browser Feeds reader Podcasting
Web albums	Publish to Picasa™ Publish to YouTube™ Publish to website
Browser compliancy	HTML version 4.01 OMA Browsing 2.1  CSS 2.0 and CSS 2.1  JavaScript 1.5 (ECMA-262 3rd Edition) HTTPXMLRequest AJAX
Protocol compliancy	HTTP/1.1 TLS 1.0 and SSL 3.0 OMA Download 1.0/2.0 RSS 2.0

Related information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

[www.webkit.org](http://www.webkit.org)

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